Agenda Item No._____

File Code No. 540.10

CITY OF SANTA BARBARA

COUNCIL AGENDA REPORT

AGENDA DATE: September 20, 2011

TO: Mayor and Councilmembers

FROM: Water Resources Division, Public Works Department

SUBJECT: Sole Source Purchase Orders For Water Treatment Chemicals At The William B. Cater Water Treatment Plant

RECOMMENDATION:

That Council find it in the City's best interest to waive the formal bidding process, as authorized by Municipal Code Section 4.52.070(k), and authorize the City General Services Manager to:

A. Issue a Purchase Order in the amount of $35,000 to Nalco Company for the purchase of CatFloc 8108 Plus cationic polymer, with the option to renew the purchase order for an additional four years, subject to Council's adoption of the budget;
B. Issue a Purchase Order in the amount of $82,000 to Enviroclear Technologies for the purchase of Hyfloc 3755 anionic polymer, with the option to renew the purchase order for an additional four years, subject to Council's adoption of the budget; and
C. Issue a Purchase Order in the amount of $450,000 to Norit Americas, Inc., for the purchase of up to 600,000 pounds of Norit Hydrodarco B Powdered Activated Carbon, with the option to renew the purchase order for an additional four years, subject to Council's adoption of the budget.

DISCUSSION:

The William B. Cater Water Treatment Plant (Cater) provides regional water treatment to the communities of Santa Barbara, Summerland, Montecito, and Carpinteria. Following the Zaca Fire, there were increased levels of organic material in the water, which required the addition of significant amounts of powdered-activated carbon and coagulants during the water treatment process in order to meet federal drinking water regulations for the treated water. The level of organic material in our raw water supply has been slowly declining, but it still remains above pre-Zaca Fire levels.

To address water quality issues created by increased organic material in the water, powdered-activated carbon is used during the treatment process. Staff also uses cationic polymers to cause organic material to clump together so it can be removed in the filters. Once removed from the water, the organic material and carbon form a sludge which is dewatered using a belt-press. Anionic polymer is added to the sludge to improve the efficiency of this process.

All manufacturers of powdered-activated carbon and water treatment polymers use their own proprietary blend of chemicals, and not all of these products are equally efficient at treating the City's surface water supplies. Cater staff has tested many different manufacturers' products in the last several years to pre-qualify vendors for the City's formal bidding process. The chemicals recommended below are the most cost effective for the City's water treatment process.

Cationic Polymer

Each manufacturer of water treatment polymers uses its own proprietary blend of chemicals. Cater staff has tested many different manufacturer's cationic polymers throughout the years, and has been purchasing Nalco CatFloc 8108 Plus cationic polymer through an annual blanket purchase order since 2009. This product has proven itself as a low cost, stable, and reliable addition to the treatment process. It buffers seasonal changes in raw water quality, minimizes turbidity-related issues, and helps keep the City in compliance with Federal and State drinking water regulations.

The process of prequalifying alternative polymer options for the competitive bidding process is complicated. The final step involves testing the polymers that performed well in small scale laboratory testing to a full scale trial run throughout the plant. The process takes several months and is not without risk of compromising water quality. In addition, it does not guarantee the selected product will work well with the raw water quality changes that occur seasonally, as each full scale trial run might only last a week or two. The process of prequalifying alternative polymers at this time is risky and not recommended by staff at this time. Construction of the Cater Advanced Treatment Project is underway and includes several critical shutdowns for the plant. Once the project is complete, staff will resume testing and qualifying alternative polymers to comply with the City's competitive bidding process. The estimated annual cost for purchase of this cationic polymer is $35,000.

Anionic Polymer

Of the three anionic polymers that showed promising results in the laboratory phase, only Enviroclear Technologies' Hyfloc 3755 performed well in full-scale trials. To achieve the same result, two other polymers that performed well had to be fed in much higher dosages. To date, Hyfloc 3755 is the only anionic polymer tested that consistently works well with Cater's dewatering equipment to produce sludge that is suitable for hauling and meets disposal criteria for the City's contracted Chiquita Canyon Landfill in Castaic. The estimated annual cost for purchase of this anionic polymer is $82,000.

Powdered-Activated Carbon

Powdered-activated carbon is added during the water treatment process to remove total organic carbon (TOC) for compliance with the Environmental Protection Agency's Disinfection By-Product Rule. In 2008, only two manufacturers submitted products that met Cater staff's performance objectives for TOC removal. After competing in the City's formal bidding process, Norit Americas, Inc. (Norit), was awarded a purchase order in 2008 for their Norit Hydroarco B powdered-activated carbon.

In 2009, Cater staff tested and qualified a third powdered-activated carbon, Mead Westvaco Corporation's Aqua Nuchar. Based on performance during a full-scale test through the plant, Mead Westvaco's powdered-activated carbon performed well, but was slightly higher in cost to achieve the same percentage of TOC removal as the Norit product.

Goleta Water District (Goleta), which has the same water source as the City, also uses powdered-activated carbon in their treatment process for TOC removal. Sharing the same source water, Goleta and the City's testing results have historically been nearly identical. In May of this year, Goleta performed comprehensive testing on three different powdered-activated carbon samples. One sample was supplied by Mead Westvaco (Aqua Nuchar) and two samples were supplied by Norit (Hydrodarco B and Hydrodarco EXP 385). The results of the testing closely mirrored the City's test results from 2008-2009. Goleta awarded the contract to Norit and will be using Hydrodarco B, which proved to be the best value based on cost and performance. Considering the City and Goleta share the same water supply, and the results of their recent comprehensive testing, staff is confident in sharing Goleta's results and recommends Council authorize a purchase order for Norit.

The estimated annual cost for purchase of the Norit powdered-activated carbon is $450,000. After construction on the Cater Advanced Treatment Project is finished and the ozone pre-treatment process becomes operational, it is anticipated that the City's use of polymers will be reduced. The need for powdered-activated carbon in the treatment process will greatly diminish, and possibly will cease altogether.

BUDGET/FINANCIAL INFORMATION:

The combined cost for chemicals is estimated to be $567,000 for Fiscal Year 2012. There are sufficient funds in the Water Fund to cover these costs.

PREPARED BY: Catherine Taylor, P.E., Water System Manager/mh

SUBMITTED BY: Christine F. Andersen, Public Works Director

APPROVED BY: City Administrator's Office